OCTOBER, 1948

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Florida WILDLIFE

PUBLISHED MONTHLY BY THE FLORIDA GAME AND FRESH WATER FISH COMMISSION

TIME TO TAKE STOCK

By FAIRFIELD OSBORN



HIGH PRAISE

Dear Sir;

I have been receiving your Florida Game and Fish Commission's publication, Florida Wildlife, for a year now and I would like you to know how much I appreciate it. I hope to remain on your mailing list for a long time to come.

The August issue is one that caught my eye above all others. Your articles; "Pittman-Robertson and How It Works," "They Get the Facts," and "Conservaton Goes to College" are all articles that are designed for public education in this vast field of conservation of our wildlife. It is now realized that public relations, when properly used, is one of the greatest needs in this fight to perpetuate game birds and fish, and your publication is doing much to further this work. If your magazine is indicative of your game and fish commission, then Florida may be proud of her progress in game conservation . . .

Keep up the good work,—we need more magazines like yours throughout the country.

JIM SJORDAL Minneapolis, Minn.

A CIRCUS WRECK

Dear Sir:

In a recent FLORIDA WILDLIFE you stated that armadillos normally are seen only in the desert country of the Far West. You are wrong. There are hundreds of armadillos in an area of scrub land extending from Vero Beach to Cocoa. In 1943, I caught, trapped and bought scores of them in that area to take to a wildlife management tract I was experimenting with in South Georgia. According to the story I got, some circus or sideshow had a wreck in that territory and several armadillos escaped. They multiplied rapidly and now share the area with gophers and rattlers.

G. R. Hunter-Palatka

This picturesque camera study was posed by Seminole Indian John Pool. — Photo by C. H. Anderson.

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OCTOBER, 1948

For the
Conservation, Restoration, Protection,
of Our Game and Fish

Published monthly by the
FLORIDA GAME AND FRESH WATER FISH COMMISSION
Tallahassee Florida

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The Cover

Conflict....

OR MISUNDERSTANDING?

A GUEST EDITORIAL

by JOHN F. DEQUINE

R. JOHN Q. PUBLIC, disturbed over what he has read and heard lately, is convinced that there is plenty of "bad blood" between the sports fishing clan and the commercial fishing interests in Florida. However, despite the reams of unfavorable newspaper copy, I'm convinced the situation is more a matter of misunderstanding than actual conflict. Before presenting my conviction, it is well to define the men who make up the two powerful groups, and their interests. If my definition is wrong—then, of course, my conclusions are wrong too!

Very likely you are an average Florida sports fisherman. For a matter of five or six days each week you work hard at your trade, business or profession to satisfy the needs of yourself and family. Your hobby is fishing—although you may lay your tackle aside for a gun this fall—and you average one fishing trip each week.

What do you consider a satisfactory catch? Well, you are always trying for the big ones, and usually for the legal limit, but you still have the time of your life when you connect with three or four bass weighing around two and a half pounds apiece—or enough bream or crappie to make it possible to invite your non-fishing friends in for a backyard fish fry.

In describing you, I have fairly accurately defined your interest in the matter of the conservation of our fresh water fisheries resources. You want a supply of fish sufficient to allow you to catch a "mess" almost every time you visit your favorite fishing haunt. True enough, you expect to come home fishless a few times each year—else how could you compensate for your pet theories concerning the weather, the moon, the barometer—and other sports fishermen in general?

You strive to understand the reasonableness of fish and game laws and attempt to make sure that any restrictions placed thereon are for your benefit as well as a guarantee of future fishing fun for your children and grandchildren. In this respect, you find it hard at times to compensate for a law that permitted you to take but 25 bream or 25 crappie while commercial fishermen, with much more efficient methods, were marketing millions of pounds of these species each year. At the drop of a hat, you blame the commercial fishermen for many of your unsuccessful fishing trips.

Now, let's analyze the average Florida commercial fisherman!

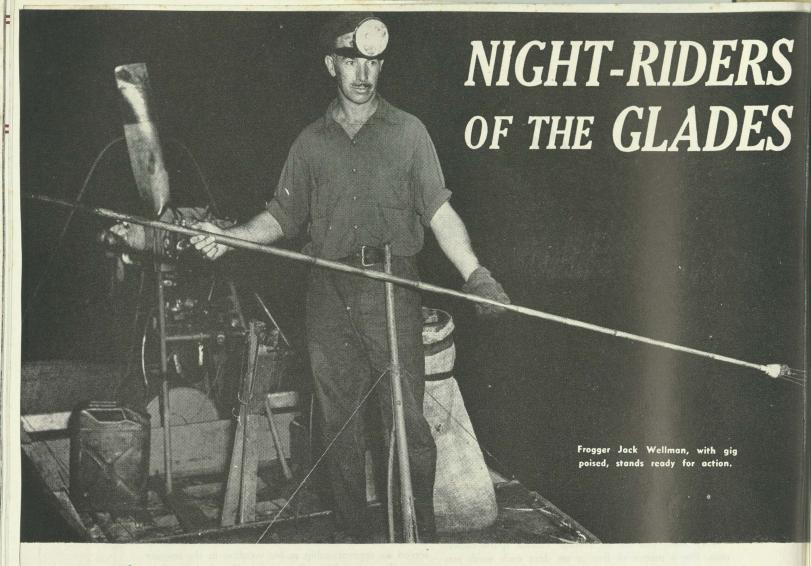
He, not unlike you, is an average citizen. He seeks to support his wife and kids through the trade in which he was qualified by long training and experience. It is likely that he never received a formal education or served an apprenticeship in his vocation in the manner generally accepted in other trades. But don't overlook this fact—he invested a lot of time and energy to master his trade. He has mastered a skilled trade—and he has done it the HARD way.

The commercial fisherman is far more conversant with the productive capacities of the waters he fishes than is the sports fisherman. However, he is inclined to over-estimate these capacities to the detriment of both interests.

Not unlike the rest of us, he accounts for poor fishing in terms of weather, moon, migration and "acts of God." Unlike the sportsman, he seldom if ever reasons that his activities or those of other fishermen, whether sports or commercial, can be the guilty factors. Generally, he fails to recognize "over-fishing" until a fishery has been exhausted. Then, with the attitude of "I told you so," he's inclined to blame the condition on the authorities charged with administering the fishery.

What are his interests? Basically, he wants to be assured of making catches sufficient to meet his economic requirements. He wants his son and grandson to enjoy the same opportunity he has had to earn a living. He certainly does not wish to exhaust the fishing resources for, unlike the old-time logger, he disbelieves in clear-cutting and moving on—for where would he go?

(Continued on Page 22)



OST Floridians think twice before they venture into the Everglades in daylight, but a bunch of hardy individuals in West Palm Beach make their living by going into its deepest depths night after night.

These men are the professional

These men are the professional frog hunters, and they comprise one of the strangest and least known industries in Florida.

The quarry of the froggers are big green bullfrogs for the nation's rapidly increasing frog leg market. To find these, the frog hunters pilot an odd craft dubbed an "air-boat" through the darkest and most mysterious regions of Florida's glades and marshes. It's a rough, tough life that nets some 300 men scattered over the state an estimated half-million dollars a year.

Although frogging activities are carried on in many sections of the state, from the Miami area, to the marsh regions of northwest Florida, the center of the business is in Palm Beach County.

Froggers in that area have a central market for their frogs. A fish market in West Palm Beach pays the frog hunters 70 to 75 cents a pound for the frogs after they have been dressed down to the backbone and legs only. From this market the frog legs are shipped to all parts of the country for wholesale and retail consumption. The owners of the market cooperate with the frogmen in attempting to keep the price of the legs at a stable level.

Although a profitable enterprise for many seasoned frog hunters, the frogging racket just "ain't what it used to be." Veterans tell of the days when they sold their catch at \$1.25 a pound instead of 70 cents. They also recollect when not too long ago their evening haul was bigger and contained larger frogs than they are getting now. Some of the men blame this condition on nomadic froggers from other states who camp in the glades area and have no scruples about taking undersized frogs. A few favor last year's flood as being responsible for



PHOTOS BY HERB DAVIES

the reduced frog population and others point to a previous dry spell as the cause.

Jack Wellman, one of Palm Beach County's most seasoned frog hunters, recently complained of catches that yielded only three to seven pounds of legs. He considered 25 to 30 pounds of frog limbs a good night's work. Jack declined to tell of his largest haul of frogs, but he hinted that catches sometimes are considerably larger than 30 pounds.

In Palm Beach County alone, there are over 50 frog hunters and airboats in operation. The exact num-

A few rugged men with air-boats and gigs have built up a half-million dollar a year industry in Florida.

By ED C. BUCKOW

ber of craft in this vicinity can hardly be determined, because many hunters keep moving about the glades and live in camps set up in, or near the marshes.

The frog hunter's air-boat—a masterpiece of ingenuity— is a flatbottomed, sled-like craft with an airplane engine mounted at the stern. The craft draws only two to four inches of water and is propelled entirely by the prop at the stern which is turned by a light 60 to 90 horse power engine mounted high on a steel frame.

Attaining speeds of a mile-a-minute and over, this craft can traverse areas of the Everglades that otherwise would be inaccessible. They can skim over open water, saw grass, shrubs, and in some cases, roads and highways. It is because of this air-boat that the frogging business has boomed during the last few years. It has made it possible for the frog hunters to cover more territory faster than ever before.

(Continued on Page 16)



This is typical of the many frog hunter's camps that are found scattered at edge of glades.



It's hard to believe Wellman's air-boat was hurtling over grass and water at milea-minute speed when this picture was taken.



As the camera shutter clicked, this frog attempted to get out from under speeding gig. P. S.—The frog didn't quite make it.



SUPPOSE your radio blared forth to-day the news that a great new continent has been discovered—billions of acres of unspoiled land, rich in forests, grasslands, mineral deposits, wildlife, and deep, clean-running rivers. An air survey has indicated that there is no equivalent area in the world so completely fitted to become the home of millions of prosperous, well-fed, happy people. This new land belongs to no one but a few thousand scattered and for the most part nomadic peoples. It stands there for

the taking—a great untouched stock of natural living resources.

One cannot help but wonder, should such a phenomenon be possible, whether the human race would make the same mistakes in "conquering" a vast new land area that we Americans have made in "harnessing Nature" in these United States.

Less than five centuries ago Columbus brought home to Europe the greatest news flash of all time. Even so, more than a hundred years were to pass before a thin fringe of col-

A factual, hard - hitting article on the danger that threatens our pantry of natural resources.

onists was permanently established along our Atlantic coast and a few scattered Spanish outposts had found root in what is now California. Over two centuries more elapsed before the "winning of the West," and the actual settlement of the Great Plains did not take place until a few short decades ago. In these really recent years we truly began to roll.

These general facts are cited for the purpose of reminding us that it took some time as human history goes for the pressure of population to carry our people into the great interior of our country. Only a little while ago our resources seemed limitless. Land was cheap. Virgin timber was free for the cutting. Rich grazing lands stretched away beyond the horizon. The history of many a pioneer family starts with the stripping of a farm in Maine or Connecticut, a move to Ohio, on to Iowa and off

This picture, taken on a West Florida farm, gives graphic evidence of what is happening to our lands. Experts say more than five and one-half billion tons of our top-soil is taken away annually by erosion.



across the plains to the Great West—leaving a trail of spoliation and waste.

In the colonization of a great new continent would we repeat the errors of the past?

In the beginning the American people took over the custody of some 1,900,000,000 acres of land. Some 40% of it was in virgin timber. A billion of the total acreage—over half of it—was suitable for crop lands, farm pasture or range-grazing lands. The remainder represented natural desert and mountain tops. That was the inventory of our resources, our pantry, when the United States went into business.

How do we total up today? Let us check the timber item. Of the approximately 800 million acres of virgin forest that fell to the care of the founding fathers only about 133,-000,000 acres—some 17% remains. About half of the original total acreage is in second and third growth forest including scattered farm woodlots. And how are we administering this pitiful remnant of our former wealth? The Forest Service of the Federal Government in its last annual report states that in 1909 the total stand of saw timber in the United States came to 2,826 billion board feet. By 1945-a generation and a half later—our national "woodpile" had been reduced to 1,601 billion board feet—a reduction in our inventory of some 44%. This does not indicate the amount of standing timber represented by those species of trees that were not considered valuable in 1909, but which are now included in the latter total. Nor does it reveal the fact that of our remaining 133 million acres of virgin forest 96% is in the western states. So far as virgin timber is concerned the east, the south and the central states have practically none of it.

This is only part of the forest story. It is reported that we are consuming our now limited supply at the rate of 54 billion board feet each year while our annual growth rate is only 35 billion. Consumption surpasses replacement by more than 50%. It does not take much paper to figure how long at this rate it will be before we can close out our timber inventory.

Let's look at the farm land item. The most recent report of the Soil Conservation Service estimates our present farm croplands total at approximately 460,000,000 acres. Erosion, largely man-made, is said to take away 5,400,000,000 tons of our life-supporting topsoil every year. It is stated that 3,000,000,000 tons wash or blow away from American farms

every twelve months—enough to fill a freight train that would girdle the earth 18 times. Erosion by wind and flood is estimated to carry away some 21 times as much plant food from our soil as the total of its productive crops. The total red ink item representing annual soil loss in the United S t at e s approaches \$4,000,000,000. This total is made up of the losses of soil, plant nutrients, direct loss to farmers, plus the cost of damages by flood and erosion to highways, railroads, waterways and other facilities and resources.

So the story goes. Our forests and our grasslands are the basis of our national wealth. Oil, minerals, all our other resources add to the total, of course, but it is by our forests and our grasslands that our people eat and live.

It is high time, thus, to take stock of our pantry. No family could live and thrive by such inroads on its capital and no one can spend more than he earns for long. No sound business could pursue a policy by which capital replacements were not adequately and regularly planned. And by the same token no nation which spends its wealth faster than it can be replaced can survive. The most tragic chapters of the human

(Continued on Page 21)

Denuded by the logger's axe years ago, this North Florida land has been kept practically valueless by woods fires which have killed virtually every pine seedling which came up by natural reproduction. Repeated burning has made this cutover pine land near Blountstown completely barren. Despite the staggering depletion of Florida's timber resources during the past 50 years, the state continues to have the nation's largest annual fire loss.





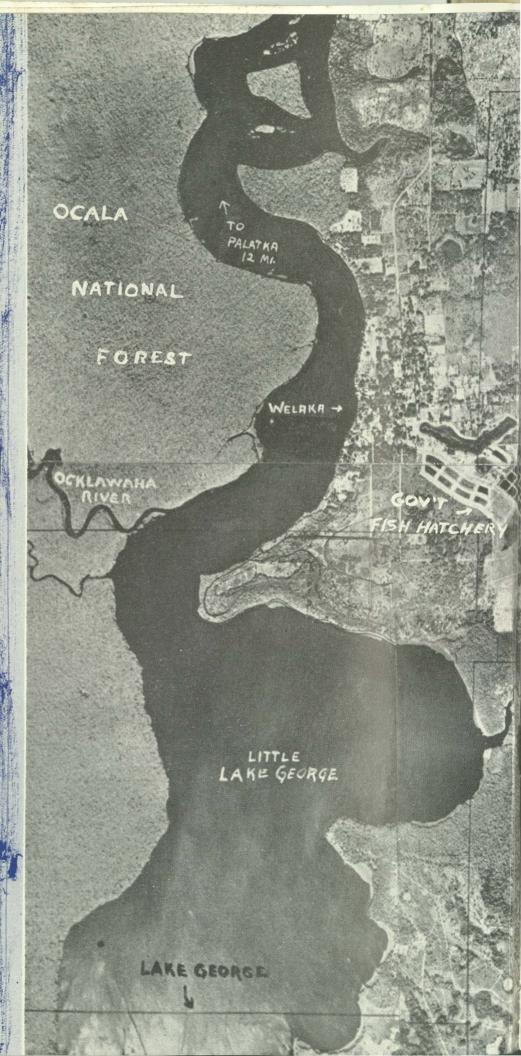
THIRD IN A SERIES

Strikhns Strikhns

Charles Jt. Anderson

Title (to a to a figure)

Brown to stand of the first to the first to



LL of this," said Capt.
Noah Tilghman, dean of
the St. Johns river fishing guides, "is because of
the biggest and fightingest bass in
the country. The black bass of the
St. Johns."

The "all of this" he spoke of was a mere seventy-five foot "fishing" vacht, sleek under a fresh coat of varnish, yacht white and new gold letters on stem and stern; a two story boat house that not only housed the yacht "Noah's Ark" but also contained a five room, nautically appointed apartment that looked like it was designed for the Queen Mary. It was Capt. Tilghman's riverside quarters when in port. An expensive new car was on the covered dock that ran the length of the boat. Smaller boats, scattered throughout the boat house, were being refitted and painted for the coming bass season.

"All because of these black bass, I gave up the hardware business thirty years ago to go fishing for keeps," reminisced Capt. Noah.

Capt. Tilghman's story, though, is not at all singular. In the two hundred and fifty miles of river, from its headwaters to Doctors Inlet, near Jacksonville, where sweet water becomes brackish with salt, there are over a hundred camps of varying degree of luxury that will provide the angler with exactly what he wants—fish. Big, fighting game fish.

Before the coming of the white man the Indians referred to the vast system of rivers and lakes as "welaka," a chain of lakes. The St. Johns is just that.

The source of its waters begin in a swamp not far from Melbourne and gather in small, oddly-named Lake Helen Blazes. A small canal or creek connects it with Lakes Sawgrass, Washington, Winder and Ponsett.

By the time it emerges from Lake Ponsett the reason for it being called a river becomes more apparent. It flows on to Lakes Harney, Jessup and Monroe. A few miles beyond Lake Monroe, the Wekiwa, the river's first large tributary enters, after a twelve-mile run, from a spring that emits some 42,000,000 gallons of water a day. The St. Johns is now a river affording passage to boats with up to an eight foot draft. Strung next on the chain are



Florida's purple nemesis of the waterways, the hyacinth, has cost the St. Johns much of prime fishing area.



More than a hundred fishing camps line the banks of the St. Johns from Jacksonville to Lake Monroe.

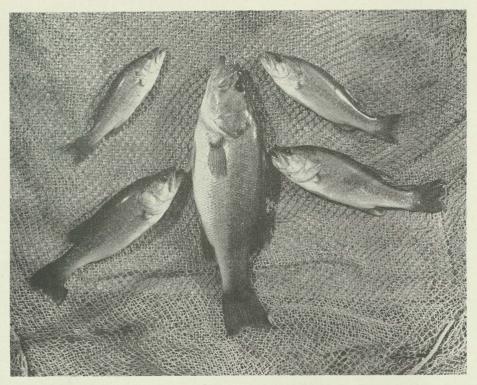
Lakes Beresford and Dexter. Twenty-five miles west of Daytona Beach the river expands into the largest pendant of the chain, Lake George. A few miles north of George it is joined by its main tributary, the Oklawaha river, bringing in the cool clear over flow from Silver Springs.

Nearing Palatka the river makes an elbow turn that pushes the banks a full mile apart. From here, past Green Cove Springs and on to salt water at Doctors Inlet the river looses the appearance of such and looks as if it were a long narrow lake. It is here that the St. John's makes one of its two bids to take its

(Continued on Page 21)

Some of the veteran guides along the river virtually guarantee their customers catches like this.





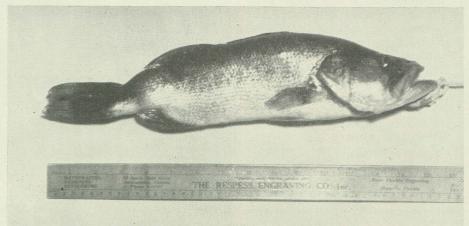
These five fish are all the same age—a year-and-a-half old. The bass in the center came from a well-balanced lake; the others from an overcrowded body. The bass from the well-balanced lake weighed 20 ounces, more than the total weight of the other four.

TOO MANY

Bass!

By Robert W. Murray

This fish was $4\,{}^{1}\!\!/_{2}$ years old, weighed one and three-quarters pounds, and was 15 inches long. It should have weighed nearly seven pounds and should have been 23 inches long.



HE sun was showing about half of its rosy face above the eastern horizon as two Pensacola fishermen, whom we'll call Jack and Joe, pulled their boat trailer up to the edge of a beautiful little 30-acre lake in Washington County. It was a perfect morning for bass fishing. A few early morning clouds were gathering overhead and there was a cool breeze stirring. Around the edge of the water schools of minnows could be seen scampering in wild fright as they were pursued by their mortal enemy, the black bass. Farther out on the lake an occasional fish could be seen jumping high and wide into the air.

Eagerly the two men launched their boat and assembled their rods and reels. They had also brought along their faithful "cracker" poles and a can of wigglers for bream fishing—just in case. But everything looked like a cinch for bass, as Joe confidently unwound his gear and Jack

A wildlife biologist takes time off to uncover some interesting facts about POOR fishing.

took his position in the stern with the paddle.

The bass were feeding; this was it! On Joe's second cast there was a small splash and swirl of water where his floating plug lay twitching and jerking on the surface. He was excited.

"Missed him," he exclaimed to Jack. He tried again; the same thing happened. Then again, with the same results. Gradually his excitement began to give way to puzzlement, then disgust. He continued to get strike after strike, but no fish. Finally he gave up and traded positions with Jack. Jack got just as many strikes—and just as few fish.

After two hours of hard casting they had accounted for exactly 90 strikes, but not the first bass had gone on their stringer. Discouraged and a little bewildered the men fi-

nally pulled up to a clump of grass in deep water and decided to try their luck with bream. No sooner had Joe's baited hook sunk than his cork bobbed once and disappeared.

"Looks like we'll get a mess of fish after all!" he yelled to Jack as his limber pole bent under the power of what was apparently a large fighting bluegill. But Jack was too busy to hear him. His had disappeared too. Both bream, however, turned out to be little bass about eight and one-half inches long.

"They're not even legal size," muttered Jack as the two flapping fish were unhooked and returned to the water.

To make a long story short the Pensacola fishermen continued to catch the little fellows one after the other until their bait supply was exhausted. But not a bream was caught—and not a legal size bass! Finally when the sun began to get unpleasantly warm, two disgruntled anglers, who had spent good money to make this fishing trip, stored their gear, loaded their boat and went home in disgust—without a single fish.

A LTHOUGH the names in this story were borrowed, the circumstances were not. Such fishing conditions have been found to exist in all too many lakes in the sand-hill country of Northwest Florida. Having often been a victim of such circumstances myself, I decided to make a little study of one of these lakes in my spare time. I wanted to see for myself if there was any scientific basis for such conditions. The lake I picked to study was, on the surface, a typical small North Florida lake. Right now it contains 30 acres and has a maximum depth of 21 feet. Normally it contains 15 acres and has a maximum depth of 13 feet. Highwater this year has been responsible for the change. The water has doubled in area and tripled in volume.

During the summers of 1947 and 1948, I caught and examined literally hundreds of fish. This was made possible by the rate at which they could be caught. At times I have caught them at the rate of 15 per hour with worms or on artificial flies. As many as eight or ten bass sometimes followed a fly on a single cast. Plug casting was never successful. The fish were too small to get caught on a plug. Of all the fish I took from this

lake only two were legal size. One was stunted, four and one-half-year-old specimen which weighed one and one-fourth pounds, and was 15 inches long. Normally bass this old weigh almost seven pounds and are 23 inches long. The other was about the same age and slightly larger. About 90 percent of all the fish I caught measured from seven and one-half to ten inches in length.

My examination of the fish included aging, weighing, and measuring. Age was determined by an examination of the scales. A fish scale upon close examination shows rings similar to those of a tree stump. Each ring (annulus) is the result of a year's growth.

Most of the bass in this lake were about one and one-half years old. The average weight was one-quarter pound and the average length eight and one-half inches. Normally bass this old are legal size and weigh over a pound. At the present rate of growth it will take these bass three and one-half years to reach the legal size of 12 inches. At this age one should weigh four and one-half pounds. And present rate of growth in the lake is higher than usual be-

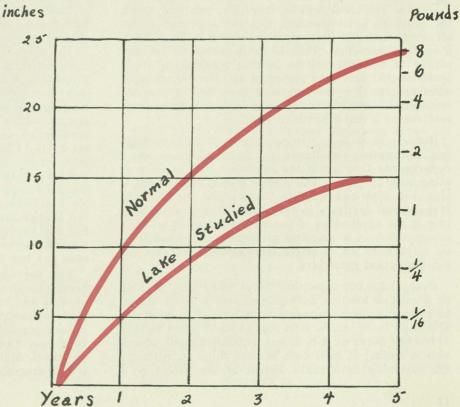
cause of the increased water level. This has somewhat relieved the crowded conditions and the competition for food. When the water level returns to normal, competition will be more acute than ever because of this increased growth rate. This, together with the fact that these fish will spawn and further increase food competition makes it doubtful that they will ever reach legal size.

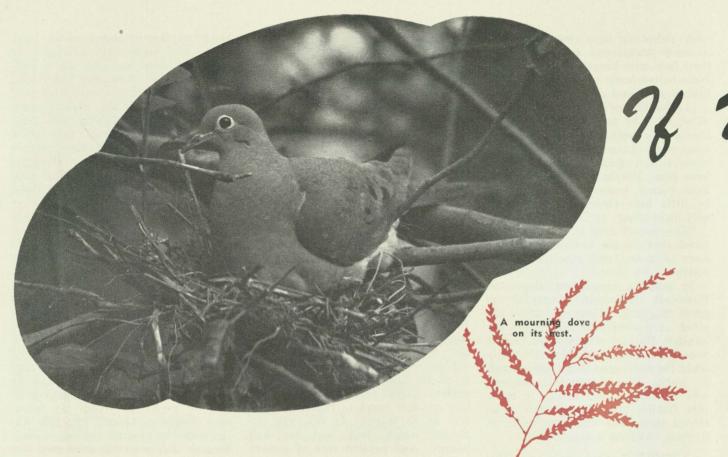
As far as can be determined there are no bluegill in the lake. Therefore the fish have an insufficient supply of food. Food consists only of insects and topwater minnows. The absence of bluegill will only aggravate conditions more as the bass spawn, because there will be nothing to prevent a large hatch. Bluegill feed to some extent, upon bass eggs and help prevent a large hatch.

Actually a body of water that is overpopulated with bass such as this one is worse off than having no fish at all. A lake with no fish can be stocked properly with bass and bluegill. It would be foolish to introduce fingerling bluegill into this water with the present number of bass because they would be consumed like

(Continued on Page 19)

A growth-rate chart prepared from data gathered during the author's study. The long graph shows the growth rate of a bass in a normal well-balanced lake.





F YOU HUNT doves in Florida this fall you probably will be checked by a conservation officer or a biologist of the Game and Fresh Water Fish Commission or of the U. S. Fish and Wildlife Service. The check will be thorough; you may think the questions a bit personal, and the examination the officer or biologist gives your doves will be more than a cursory inspection. That is as it should be for the officer or biologist will be getting information about problems that have long prevented an effective management program for the mourning dove, and, a sensible management program is necessary if dove hunting is to continue as a major southern sport.

Hunters in at least fifteen states will be contributing information simultaneously. State fish and game departments throughout the southeast will be cooperating with the Game and Fresh Water Fish Commission, the Fish and Wildlife Service and the Wildlife Management Institute in the study. This is something new in the application of the united forces of wildlife conservation to a pressing problem, and promises to go far toward an effective management program for this important game bird.

Over 11,000,000 mourning doves were shot in 1942 by American hunters during open season in 25 states. In the same year, pheasants were hunted in 35 states and quail in 40 states. It is just as much sport to take 11,000,000 doves as it is to bag 11,000,000 quail, pheasants or ducks; at least dove hunters think so. Although the mourning dove ranks fourth in the nation as a

whole in popularity, kill and importance among American game birds, it is forgotten by many people. The dove nests in each of the 48 states and in all of the southern Canadian provinces; it migrates from Alaska at least to the West Indies and Central America, One bird banded in Jowa turned up in San Salvador and another banded in Massachusetts was shot in Arizona In the north, the dove is recognized by law as a song bird and many individuals are pressing for increased protection, but in the south it is a game bird second only to the bob-white quail, and the turor over open hunting seasons below the Masch Dixon Line is but one indication of our need for more have the dget about dove habits and movements. Open having seasons are set by the Fish and Wildhife Service under the provisions of the Migratory Bird Treaty Act, always with recommendations of State Game Departments in mind. During the past two years the Fish and Wildlife Service has held a series of public hearings throughout the United States and has sought information regarding the supply of migratory birds from hunters and administrators alike, prior to designation of open seasons and bag limits for the following fall.

The Service long ago recognized the need for a comprehensive assemblage of facts upon which to base seasons and bag limits for the mourning dove and has made or assisted in studies of this nature to the limit of its financial resources. Several years ago the agency, in cooperation with the Alabama Conservation Department, Alabama Polytechnic Institute, and the Wildlife Management Institute, financed a comprehensive

Though the second most popular game bird in the South, the mourning dove is still pretty much of a question mark to wildlife technicians.

m HUNT DOVES...

By LEONARD E. FOOTE

study of the mourning dove in Alabama under the direction of Allan M. Pearson and George E. Moore. A similarly financed cooperative project was conducted under the direction of H. Elliott McClure for the Iowa Cooperative Wildlife Research Unit in Iowa and Nebraska. These investigations added immeasurably to a knowledge of factors affecting mourning dove populations, and have formed the basis, with supplementary information from other areas, for management of the dove and for dove burting regulations.

and for dove hanting regulations.

Because the dove is a rapid migrator with an extensive range, it presents a complex management problem. Hundreds of thousands of birds are produced over its great breeding range, and in the north, production is closely associated with man's activities. Doves nest primarily in trees and shrubs; high nesting densities may be found in farm woodlots in the corn and grain belts, in shade trees in towns and about farmsteads. Production in open pasture, meadow, and cultivated lands is small by comparison. Because of its close association with shade trees, in northern United States the dove is considered a song bird, to be protected for the enjoyment of the farm family and the urban townsfolk, and to assist in the control of noxious weeds about the farm, for the dove is a constant consumer of weed seeds.

ANAGEMENT of the dove population, and especially as related to open seasons, is further complicated by the dove's long breeding period. While there are records of nesting attempts during every month of the year, the bulk of the population breeds from May through September in Iowa, and a pair of adults may nest as many as four times during the spring, summer and early fall. Here over 20 per cent of the young one-fifth of the total production, do not leave the nest until after September first: results from the Alabama study indicate that in northern Alabama more than one-third of the adults killed by hunters during the first few days of September left nestlings to perish.

In an effort to judge the effect of September hunting on the breeding population nearly 7,000 doves were examined in Tennessee during the 1948 hunting season. This cooperative investigation was made by the Tennessee Conservation Department, the Fish and Wildlife Service and the Wildlife Management Institute. Dove hunters were checked in the field throughout September in all sections of Tennessee by conservation officers and biologists who estimated

that over three-fourths of the birds killed by hunters were young of the year. The adult mourning dove feeds its nestlings by regurgitation and both adults possess glands on the sides of the crop and neck which produce a whitish substance called "pigeon milk" upon which the young feed. These glands disappear when the nestlings begin feeding themselves, but with experience can be detected readily. Adults still bearing pigeon glands during the September season in Tennessee made up about 30 per cent of the adults examined, but only about 7% of the total birds taken. Here enters another complexity; where were the juvenile birds which figured so highly in the Tennessee kill produced? Were Tennessee hunters shooting the juvenile crop of doves produced in Tennessee, Kentucky, Illinois, Wisconsin, Michigan or Indiana? Did the September hunting season in Tennessee account for the marked lack of doves reported in Georgia later in the year?

Wisest use of the mourning dove resources calls for as great an annual harvest as can be made on a sustained, long-term basis, and here the complications arise. What hunting regulations will provide (1) ample protection to sustain the bag from year to year, (2) equality in use of the resources throughout the huntable portions of the range? This is the question that must be answered by the new cooperative investigation. Wildlife administrators must know the effect of early fall hunting on the dove population and the routes and peak dates of migration to regulate hunting so that the resources will be sustained. Perhaps less stringent regulations for hunting mourning doves are both possible and desirable, perhaps present regulations are too conservative and we are not now harvesting all the mourning doves we can crop safely. Perhaps additional restrictions for a year or more will increase the breeding population until greater yields can be sustained; perhaps management of agricultural crops can be adjusted to increase dove production. Answers to these and many other questions will be sought by the cooperative mourning dove project. Until this information is obtained administrators can allow no relaxation of restrictions.

A full-scale banding program of nestlings will be included in the investigation, and banding will be done by all personnel of the cooperating states. Many more doves will be banded by trapping flocks when young doves begin to concentrate in July, and flock trapping will continue for as long as successful. This bipronged

(Continued on Page 20)

7hey're BITING Here

LAKE COUNTY

Blue gills and large and small mouth bass are really cooperating with anglers in the lakes near Groveland. The bass are banging away at the Johnson Spoon, Crippled Minnow and the 2000 plug, while the panfish are hitting that good o!' wiggling stand by—worms. Anglers are having most luck in deep water with slow moving lures.

LEON COUNTY

Blue gills in Lake Jackson and the Ochlockonee River are keeping anglers in the Tallahassee area pretty busy. Oak worms and crickets are tops for fishing in the river, and sand maggots are the preferred bait in the lake.

SANTA ROSA COUNTY

For a good mess of bass try your luck in Blackwater River, Coldwater Creek, Pond Creek and the Yellow River. Both large and small mouth bass are striking yellow surface plugs.

LAKE BUTLER

Some big bass are being taken from Lake Butler in Pinellas County. The bass are taking both live and artificial baits, while bream and shellcracker are striking worms.

Wesley Jordan recently pulled a nine-pound eight-ounce bass from the lake. A. B. Harbison was close on his heels with a nine pounder.

COLLIER COUNTY

Collier County anglers are having good tuck fishing in Lake Trafford and the canal along State Road 29 from Copeland to Immokalee. Large mouth bass are readily striking top; water frog plugs and live minnows.

LAKE WASHINGTON

Artificial lure anglers will have an easy time getting the whoppers to strike in this Brevard County lake and the South 40 Canal. The Johnson spoon and the Dalton Special will do the trick in late evening fishing for large mouths. Black bass fishing is good all over Brevard County.

A short time ago Buck G. Giddins of Orlando, hung a 12-pound eight-ounce bass on a Dalton Special while plugging in Lake Washington.

LAKE APOPKA

Large catches of large mouth bass, warmouth, bream and catfish have been making things interesting for Lake Apopka fishermen. Early morning and late afternoon fishing at the mouth of Hog Island Canal and Big Cove is recommended.

M. O. Barker and M. R. Swift ran up a score of 92 fat catfish while fishing with rod and reel at the mouth of Big Canal.

APALACHICOLA RIVER

There is fine fishing almost anywhere you wet a line on the Apalachicola River in Gulf County. The best fishin' holes are Douglas and Johnson sloughs. Bream, shellcrackers and warmouth perch have worked up an appetite for earthworms and catawba worms.

TSALA APOPKA

Large mouth bass are running the fishermen ragged on Lake Tsala Apopka in Citrus County. The fish are striking at live bait in early morning, and areas where the water is running are producing the top catches.

* * * *

Underwater plugs are taking the large mouth bass from the main stream of the Kissimmee River in Okeechobee County.

Mr. and Mrs Philip Nelson of Miami, recently caught nine large bass in the river on underwater broken-back plugs.

INDIAN RIVER COUNTY

Black bass and bream in the canals and ponds west of Vero Beach are making the days interesting for Indian River County anglers. The local experts say the Dalton Special with a yellow belly, and the Hawaiian Wiggler with a black and white skirt, can't be beaten as fish getters in that area.



ORGANIZING A CLUB

DURING the past month there have been more sportsmen's clubs organized in Florida than in any other six months period in the past. What does this signify. Increased interest in hunting and fishing, or just the desire to bring together groups interested in these sports for social functions? Our answer would be, "A little of both"-But more than either of these two reasons, we firmly believe there is a more significant reason for the sportsmen organizing. It is because they are aware of the need for better conservation of fish and wildlife and its habitat if they are to continue to enjoy the sports of hunting and fishing. It is because they have become better educated in subjects governing the sports they love so well. They have learned that only through unity of purpose can a progressive campaign of achievement in conservation be carried on. So, one or more sportsmen, deeply concerned about the future of fish and game resources in his locality, started the ball rolling by calling together others interested in the same things and organized a sportsmen's club.

A sportsmen's club can be of benefit not only locally but in state and national affairs. The activities of such clubs have a cumulative effect by stimulating public interest in the need for concerted action to protect and conserve our natural heritage of rich resources, and at the same time it brings together congenial sportsmen to enjoy good fellowship and good times. These clubs are influential and their opinions highly respected by legislators and policy making officials of government.

ACTIVITIES OF SPORTSMEN'S CLUBS

SOME of the most important functions of a sportsmen's club are to mold constructive public opinion at the local level;

to consolidate the diversified local forces behind sound programs; and to tackle conservation jobs in its community which no state or federal agency is equipped either with manpower or funds to handle.

It has been estimated that one out of every nine persons in the U.S. is interested in hunting, fishing or both. In Florida a conservative estimate would be that six out of ten persons are interested in these sports. Last year over \$1,024,000.00 was spent for hunting and fresh water fishing licenses in Florida. What a tremendous influence this group could have for better conservation of our natural resources if all were organized in sportsmen's or conservation clubs. There is definitely a place in every community for an alert, wideawake sportsmen's club. The combined efforts and demands of such a group could have an overwhelming effect for good in stopping the exploitation and destruction of fish and game and habitat. The united voices of the sportsmen's clubs cannot but have their direct influence on the community. A good sportsmen's club is a decided asset and there should certainly be such a club in every town in Florida, "The land made to order for Sportsmen".

THE FIRST STEP

Y^{OU}, being a fisherman or hunter yourself, already know the right people to form the nucleus of a club. Begin talking



"Yoo hoo, darling! I just shot at the cutest deer."

about your idea. Your enthusiasm will "catch on" and it will be easy to get together a congenial bunch for the initial meeting. Set the date for this first meeting which should be informal and at a home or place that is convenient for all. This first group will, naturally, be the organization committee. Confirm your plans by mailing out cards to those you know are interested. Then make your plans as to the subjects to be discussed, etc.

At your first meeting decide on a date, time and place for the general meeting at which you will launch and name the club, discuss and adopt a program, elect officers and begin plans for continuing club activity. Set the date soon after this organization meeting while enthusiasm is still warm.

A sportsmen's club can be lots of fun. There is no reason for your meetings to be dull. The Florida Wildlife Federation is anxious to help you get organized and to help the clubs that are organized to increase their membership. Next month we will give you some hints to follow at your first general meeting and in future issues will outline programs and club projects that will keep your club active and interesting.

Don't sit around and wait for the other fellow to start something. If there is no club in your community, start out NOW to get one organized. Your doctor, groceryman, next door neighbor, fishing and hunting buddies are all prospective members together with many many other persons with whom you come in contact every day. They are, no doubt, just waiting for someone to suggest a sportsmen's club. Everything must have leadership—so get busy and round up the crowd and get your club started.

Watch this space each month for suggestions on how your club can participate in the state conservation programs and for suggested projects and entertainment.

CLUB DOINGS

One of the newest conservation clubs in the state is the New Smyrna Beach Rod and Gun Club. According to John R. DeBerry, president, the membership is composed only of those sportsmen who have a real desire to conserve the state's game and fish and other natural resources.

Over 175 members of the Okaloosa County Sportsmen Club enjoyed a varied program of entertainment at a fish fry at Milligan September 23.

Joe Padderatz, the armless fishing wonder of the Game and Fresh Water Fish Commission, entertained the assembled sportsmen with an exhibition of his angling prowess. A talk entitled "Sportsmanship" was made by Bill Snyder, associate editor of FLORIDA WILDLIFE.

Robert W. Murray, wildlife biologist of the commission, spoke briefly on bi-colored lespedeza, highly favored quail food.

NIGHT-RIDERS (Continued from Page 5)

Frog hunters usually start out for their hunting grounds at about an hour before sunset. The landings where the boats are berthed are located at the edge of the marshes near paved roads. In Palm Beach County, the largest air boat landing is situated about 10 miles west of Delray Beach.

The frogmen usually hunt the glades until dawn, ranging as far as 30 miles into the heart of the Everglades. When darkness falls, they strap a light resembling a miner's lamp onto their heads. A long extension cord connects it to a three cell battery located beneath the airplane engine. Other equipment consists of a four-pronged gig and a gunny sack to hold the spitted frogs.

Froggers pilot their craft in circles and zig-zags through the marshes, skirting hammocks and seeking areas dotted with lily pads. They buzz along at 10 to 20 miles per hour, their headlights searching the saw grass and edges of hammocks. Standing on a platform at the bow of the air boat, with gig poised, the frogmen maneuver their craft with a long tiller mounted at the outermost edge of the bow. Steel cables run from this tiller back to a large rudder at the stern of the prop. One frogger summed up the operation of the craft with this statement:

"You have to be three guys at once."

Observations disprove this statement. A frog hunter has to be five guys at once! He must operate the tiller, spear the frogs, regulate a throttle on his left, and use his left hand to pull the frogs from the gig. The only thing he does not have to worry about is the light. That's on his head.

However, while he is picking up the glow of frog eyes in the beam of the head lamp, he must watch that he doesn't run into one of the many hammocks that are incessently looming toward him out of the darkness.

Frog hunting is a dangerous occupation. Stumps laying a few inches under the water offer a constant hazard to the unwary frogger. The peculiar construction of the air boats and the wildness of the country all add to the dangers of the game.

A few months ago a Palm Beach County frogger had an experience with the prop of his craft that resulted in a head wound that required 48 stitches.

This particular frogger had stepped from his craft into shallow water to help push another air boat that had conked out. As he stood thigh-deep in water, his own craft, which he had left with engine idling, began to drift slowly in his direction. When he tried to move from

Did you know that

The cheetah or hunting leopard of India is credited with being the swiftest four-footed animal.

A gopher will dig a hole about three feet straight down.

The shark is generally believed to be the most dangerous fish, but the barracuda, a large savage pike-like fish of the tropical seas, is more apt to attack man than the shark. It is almost as large as a twelve-year old boy and its mouth is such that any bite is likely to result in permanent injury.

Certain hair breeds of sheep are only distinguishable from goats by the direction of the tail, which is upward in goats and downward in sheep.

* *

All the ruminants or cud-chewers, namely, cattle, sheep, goats, deer, antelope and camels, invariably get up with their hind legs first, while other large quadrupeds use the opposite procedure with forelegs first.

The span of life of a crab is twenty years; of a leech, twenty years; of a spider, ten to fifteen years.

The four-eyed fish (Anableps) of South America has a double set of eyes for vision above and below the water

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the path of the approaching air boat, he found he was unable to move. One of his booted feet had become rooted in the mud.

The frogman strained feverishly to release his foot as the prop loomed nearer. But he couldn't make it. The prop struck him in the head. A race with death to the hospital followed, with the frogger barely winning out.

Veteran frogmen don't encourage

newcomers to the frog business. First, they claim the field is definitely overcrowded, and second, the Everglades and an air boat are nothing for a novice to fool with. Out in the depths of the glades in the middle of night everything looks the same. It is not much different from being at sea out of sight of land.

On clear nights, the men find their way back to the landings by the use of a form of celestial navagation. You don't find many froggers who can't tell you the names of the principal stars. When the night is dark and the heavens clouded, a compass is needed.

Most froggers agree that if an individual is not thoroughly familiar with the Everglades, and doesn't have any mechanical inclinations, he will probably meet with financial failure—and perhaps injury—in the frogging industry.

One year ago a Palm Beach County youth, who was new at the frog hunting game, was killed near a boat landing a few miles west of Delray Beach. He and another amateur about the same age were skimming along a narrow creek in their air boat when they came upon a sharp bend. They were unable to turn the craft soon enough and the boat crashed head-on into a large cypress tree.

The impact jarred the engine loose from its mounts, and with prop whirling it came crashing forward to pin one of the youths against the tree. The boy died enroute to the hospital.

However, the "old timers" come in for their share of the accidents, too. One of the stories told most frequently in frogging circles is about the fellow who got scalped by a propeller. This individual was swinging the prop of his engine to start it when his foot slipped on the greasy bottom of his boat at approximately the same time that the engine sputtered and caught hold. As he slipped he lunged forward, and the prop took a slice of skin and hair from the top of his head.

Recently the frogmen of Palm Beach County got together and formed the Palm Beach County Frog Hunter's Association. This organization is said to be the first one of its type in Florida.

The organization was formed to (Continued on Page 21)

FLORIDA WILDLIFE

EDERZIEUN NOEES

OFFICERS

President Ralph Cooksey, St. Petersburg Treasurer E. A. Markham, Gulfport

Recording Secretary George A. Speer, Sanford Executive Secretary Mrs. Sara Alberson



COLEMAN TOOKE, past president of the Pinellas County club.

Bad Health Forces Resignation of Pinellas Club Chief

Because of a recurring illness making it impossible for him to carry on as President of the Pinellas County Conservation Club, Coleman Tooke resigned recently. Vice-President W. W. Wilkerson was elected President.

Past President Tooke has always been a big booster for the club and for conservation, and in his resignation he expressed the desire to keep working for the club and helping in its many projects. However, he said that due to his illness he could not carry on as president and guide the club to "the success it deserves." After his announcement the club members were unanimous in their election of Tooke as Vice-President. He will now be able to join in the club's activities, and give his valuable assistance as Vice-President.

Gulf Beach Club Sponsors October Fishing Contest

The Gulf Beach Sportsmen's Club is offering prizes to its members for the largest redfish, snook or grouper caught on hook and line along the beaches between Passa-Grille beach and Indian Rocks during the month of October.

Given in each of the three divisions will be a fishing rod as first prize and a reel for second and third prizes.

Pensacola Clubsters Boast Well-rounded Restoration Program

The Pensacola Angler's and Hunter's Club has been carrying out a heavy wildlife program featured by restocking, quail trapping and food planting.

ping and food planting.

Under a systematic fish restocking program which has been in effect for several years, each stream in Escambia County receives a load of fingerlings at least once a

Ten loads of bream have been distributed throughout the county this year, and a load of fingerling bass is expected soon. Reports of excellent fishing in areas that have been stocked with fish in the past, have encouraged the club to continue this service. The club is assisted by the Game and Fresh Water Fish Commission in this activity.

A quail trapping and food planting program is being executed by a committee headed by Commander W. R. Parker. Parker reports that many landowners have made application for part of the 200,000 bi-color lespedeza plants which are to be made available by the Game Commission this fall. Wildlife Biologist Robert W. Murray recently inspected and approved these tracts of land for planting.

With over 30 quail traps on hand, the club is anticipating a successful year for relocating quail.

By way of introducing the youngsters to the sportsman's world, the organization has formed the Junior Member Division. Children up to 14 years of age are eligible to enroll, and they pay dues that are half the amount of the adults. They are now participating in a special junior division of the club's fishing contest.

Club officers are A. E. Swift, president;

Club officers are A. E. Swift, president; D. R. Bowman, Jr., recording secretary; and B. L. Gavin, secretary and treasurer. The board of directors are Ed. Coursen, Charlie Hart, L. J. McBride, S. S. Baggett and Grady Dixon.

The club became affiliated with the Florida Wildlife Federation this year, and its past president, D. R. Bowman, Sr., is vice president of the federation in the Third District.

Only the male Katydids, crickets and cicadas sing. The females are silent.



A. E. SWIFT, who heads the Pensacola Hunters and Anglers club.

Hernando Club Approves Closing of Weekiwatchee

The Hernando County Sportsman's Club have voiced their approval of the closing of a three and one-half mile stretch of the Weekiwachee River to fishing.

The decision was made at a recent meeting following a discussion of the subject led by Cecil Webb, Game and Fresh Water Fish Commissioner of District 1. In a talk Webb told the group that the Commission was planning to stock the closed area within a short time.

The commissioner said it would not be long before the overflow of fish from the closed portion of the river would be noticed in the open area. He emphasized the importance of having a large number of fish in that section of the river to be seen from the underwater theater and the boat trip by tourists.

Al Zaebsst, famed African big game hunter, showed the group a film which he took on one of his expeditions into the jungle. Over 200 members were present at the session.

INVENT HYACINTH KILLER

Members of the Lealman Rod and Gun Club of St. Pete have gotten their respective heads together and built a new type hyacinth eradicator. The contraption, which they have put to work on Sawgrass Lake, pulls up the pestiferous plant.

Sportsmen, Cattlemen Stage Big Get-together in Zolfo Springs

High officials of the State Game and Fresh Water Fish Commission, scores of cattlemen and many of the state's representative sportsmen gathered at Zolfo Springs recently to enjoy a noon-day beef barbecue as guests of First District Chief Wildlife Officer Ed Albritton.

According to old time residents, the occasion marked the first time that cattlemen and sportsmen ever have met on common ground to discuss the possibilities of opening thousands of acres of grazing land this Fall to a limited number of hunters that meet the strict requirements of the range land owners.

Among the more than 200 guests attending the barbecue were First District Commissioner Cecil M. Webb; Fourth District Commissioner J. W. Corbett, who also is commission chairman; Earl D. Farr, commission attorney; Fourth District Chief Wildlife Officer Curtis E. Wright; Judge Clyde Maddox, Mayor J. W. Hendry, V. V. Lee and Chick Dominick, all of Wauchula; Latimar Farr, president of the Hardee County Sportsmen's Club; and S. E. Roberts, well known rancher from Avon Park.

During the barbecue, Commissioner Webb expressed appreciation to the cattlemen for their willingness to open rangelands to a limited number of hunters in return for the commission's promise to double their efforts to campaign against trespassers, poachers, fire hunters, and cattle and timber thieves.

Speaking briefly, Chairman Corbett expressed the opinion that there "has been more interest in wildlife in this section during the last two years than ever before."

Referring to a demonstration of radio communication between several automobiles and a commission airplane that was witnessed by the barbecue guests, Chairman Corbett asserted: "we have found a very definite need for coordinating our communication system in the efficient enforcement of game laws." The system now being installed on commission boats, jeeps, swamp buggies and airplanes, he explained, will be "second to none in the country when it is completed."

During a 10-minute program after the barbecue, Joe Padderatz, armless rod and reel fisherman, gave a demonstration of how he has overcome his handicap to the extent that he starts outboard motors, saws boards with a hand saw, baits his own hooks and makes efficient precision and distance casts with a rod and reel.

New Booklet On .22's Issued By Institute

A new free handbook for sportsmen entitled "More Fun From Your .22 Rifle," has been published by the Sporting Arms and Ammunition Manufacturers Institute and is available from all sporting goods dealers participating in the SAAMI Ranger program.

The 14-page copiously illustrated booklet is crammed with suggestions for deriving the maximum enjoyment from a .22 caliber rifle. It contains all essential information for establishing home shooting ranges, both indoor and out. It is also filled with tips on improving the accuracy of your shooting and emphasizes the safe handling of fire-arms.

The adult shooter will find much valuable information between the covers of this booklet, but the publication is a must for any father faced with the duty of training a youngster in the proper handling of firearms.

Most of the early spring-song of birds is by way of announcing their claim on certain nesting areas.



Merl Miller of LaBelle with three dead bobcats and one live one. This represents one night's haul by a group of Hendry County sportsmen. The group, headed by E. T. Rennolds, has accounted for 68 cats this year.

Morgan Is Appointed to IAGFC Executive Board

Ben C. Morgan, director of the Game and Fresh Water Fish Commission, was elected to the Executive Committee of the International Association of Game and Fish Commissioners at the organization's convention in Atlantic City, New Jersey last month.

Director Morgan and L. T. Quinn of Virginia, were the only southerners selected for the committee. The Executive Committee is composed of seven wildlife leaders chosen from the 48 states, Mexico and Canada.



Part of the several sportsmen and cattlemen who recently got together in a big joint outing at Zolfo Springs.

TOO MANY BASS (Continued from Page 11)

hot cakes before they ever got a chance to reproduce.

THERE are several bodies of water in this locality in the same condition as the one studied. There are hundreds more that are overpopulated, although not so severely. Actually the undersized fish should be removed from such bodies. Each little fish removed means so much more food for another to grow and get big on. This is true even in waters that are not overpopulated.

The multitude of beautiful clear lakes in this section of the State draws many out-of-state fishermen who come for some of the famed Florida bass and bream fishing. It is a gigantic financial asset to the county and state. To make bass fishing more attractive something should be done about these overpopulated waters. Many are as badly overstocked with bream as others are with bass. Fishermen could remedy this condition by fishing the bream beds and removing as many as possible. Bream fishing should be encouraged in such lakes. When they stop biting, bass could be introduced. It is impossible to destroy fishing in a body of water with a hook and line.

The more we encourage this kind of fishing "pressure," the better will be the angling for free-spending sportsmen like Joe and Jack.

Commission to Meet Commission to Have Oct. 25-26 to View Closed Season Rule

The State Game and Fresh Water Fish Commission will meet in Tallahassee Oct. 25-26 to hear public views and take action on the controversial two-months closed fishing season in 10 north and northwest Florida counties.

The affected counties, Bay, Calhoun, Franklin, Gulf, Jackson, Jefferson, Leon, Liberty, Gadsden and Wakulla, were closed to fishing throughout April and May this

In inviting public expression of views concerning the opening or closing of the areas next year, commission Director Ben C. Morgan said there had been "considerable dissatisfaction" in a number of the counties during this year's closed season.

"It is not the desire of the commission to unnecessarily prohibit fishing so long as there are sufficient fish to go around," the director declared. "If the good people of these ten counties do not want a closed season, there is no reason for having one."

The commission meeting will be open to the public and everyone attending will be given an opportunity to express his views. If necessary, Morgan said, the meeting will be stretched into a three-day session.

The commission has also scheduled a hearing with the Pinellas county commissioners to reconsider its recent order opening the Rousseau Game Preserve, in Pinellas county, to hunters.

Portable Fair Exhibit

A brand new portable type wildlife exhibit will be shown at county and state fairs this season by the Division of Information and Education of the Game and Fresh Water Fish Commission.

The exhibit is 50 feet long and will contain 10 cages of native Florida animals and birds, and a 20-foot aquarium exhibit of fresh water fish. Animals to be shown are: a cub bear, baby deer, wildcat, fox, coon and squirrel. Wildfowl to be exhibited are ducks, geese, quail and wild turkey.

Large-mouth black bass, bream, catfish, bluegills and other fresh water fish will be on display in the aquarium section.

Due to the nature of its design, the entire exhibit can be set up in two-hours time. The information booth at the exhibit has been constructed to simulate a huge tree trunk.

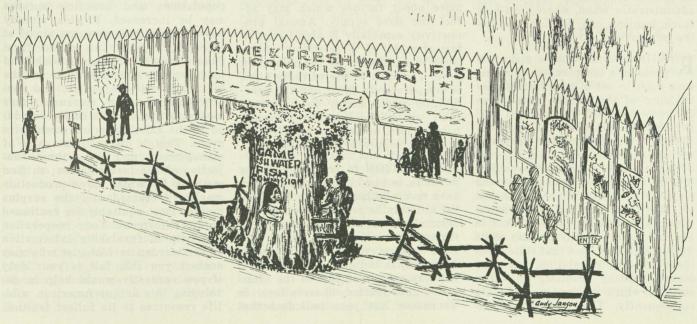
The wildlife show has been booked for nine fairs to date.

Georgia Commission Sets Own Dove Season

The Georgia Game and Fish Commission last month disregarded the dove season set down by federal migratory bird authorities and announced a season of their own.

The state was given a straight 45-day season running from December 18 to January 31, but the Georgia game commission announced an additional season from September 16 to 30.

Below is an artist's drawing of the 50-foot portable exhibit which the Game and Fresh Water Fish Commission will sponsor this year at fairs throughout the state.



(Continued from Page 13)

banding program will chart dove movements from the day an individual leaves its nest. The study also promises information not only on migration routes, but upon length of life, total kill, and differences in migration habits of juveniles and adults. Periodic censuses are to be made, not only of breeding and nesting populations, but of migrant populations as well, so that periods of ingress and egress from different portions of the range may be determined. To set a hunting season, doves must be available to the hunter and, for the conservation of the resource, the status of the entire population must be known when the season opens in any one state. Combined information from banding and census will tell the wildlife administrator the effect of a September season not only upon birds then found in Tennessee, for instance, but upon the population as a whole. The administrators will know the effect of a September season in Tennessee upon October hunting in northern Mississippi or southern Florida, and upon birds which are returning to breed in Kentucky or Indiana the following spring.

Eastern North America may have as many as four distinct dove populations each moving independently. If this is so, management must be based upon results of a full-scale banding program designed to differentiate movements and tell the administrator when, where, and how much hunting can be sustained by the population.

R APID dove movements make the problem a complex one, for seasons must be set in part for the convenience of the hunter, as long as the resource itself is protected sufficiently to guarantee its survival. This is the major problem confronting the administrator, for hunters certainly have a reasonable objection if the season opens after the majority of the doves have passed on. Yet the administrator cannot permit an excessive early fall kill in any one state, not only because of its injurious effects upon that state's resident breeding population, but upon poorer hunting resulting in other states to which the dove may migrate subsequently. Thus the determination of the allowable hunter kill and its equitable distribution over the large range of the dove is one of the most exacting determinations upon which the wildlife administrator must decide.

With exprience, adults and juveniles can be separated readily in the fall by differences in featheration. As the young dove grows toward adulthood, juvenile plumage, characterized by a distinct white edge on most of the feathers, gradually is replaced by plumage not bearing this white edge. The last juvenile feathers to be found on a maturing dove are on the wings. With close observation and careful practice one may attain sufficient skill to distinguish accurately between adult and juvenile mourning doves by the feathers on the wings, but care must be taken not to be misled by a frayed or "weather-beaten" condition which occurs sometimes on adult feathers. The presence of pin feathers does not necessarily indicate a bird of the year, since adults also moult in the fall.

Game managers and administrators have found it important to collect information on the numbers of uveniles in relation to the numbers of adults, because this information is a good index to production of the proceeding breeding season. When coupled with information on migration, kill, agricultural and weather conditions, it is possible to evaluate the productivity on different parts of the breeding range and learn more about factors which may affect the dove supply. Annual productivity especially is significant in management of a relatively shortlived species such as the mourning dove. The span of life of these birds is comparatively short and the yearly crop might better be harvested than wasted to humanity through natural loss, as long as an adequate breeding supply is safeguarded.

IN ADDITION to seasons and bag limits, wildlife administrators have several other methods by which the kill may be adjusted to meet the demands for a sustained supply. In Alabama, adult doves which still were feeding young appeared more frequently in hunter's bags when hunting was carried on late in the afternoon and limited observations in Tennessee last year indicated that

solitary doves, frequently seen sitting alone on public utility wires, were often nesting adults than were those represented in flocks. If these points can be substantiated by the present investigation administrators may be able to curtail the killing of nesting adults by prohibiting hunting late in the afternoon and limiting hunting to waterholes and flocking fields.

The value of refuges specifically managed for mourning doves has not been explored. Presumably a chain of mourning dove refugees would function just as effectively as those now maintained for waterfowl, especially if developed in conjunction with public shooting areas and offering insurance against undue depletion of the resource. At the present time there is no known justification for areas reserved specifically for mourning doves, but should the cooperative investigation show the need for curtailment, a refuge program might meet the needs of wildlife administrators in adjusting hunter kill to annual production.

Of greatest and ultimate significance, however, is the formulation by each state of a policy and technique for management of the mourning dove within its borders. This may involve minor changes in farm crop harvesting methods to insure an adequate dove food supply at the peak population period in the state, and suggestions for management of farm woodlots, field borders, hedgerows and farm ponds, so that breeding populations and breeding success may be increased. Florida already has a development program aimed at increasing quail and other farm game through cooperation with land management agencies such as the Soil Conservation Service, and specific management measures for mourning doves could easily be added to the existing improvement program. This is the ultimate aim of management, and the ultimate objective of the investigation; to find methods by which dove production may be increased and the surplus divided most equitably for continued public enjoyment. Your cooperation and help in furnishing information to the warden or biologist who may contact you this fall is your duty if you earnestly would help in developing this unique American wildlife resources to its fullest fruition.

NIGHT-RIDERS

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protect the frogger's interests, and has dedicated itself to the conservation and protection of wildlife in the Everglades. In the past, there have been a considerable number of game law violations in the glades that were linked with air-boats and frog hunters.

Firmly believing that these violations were committed by a small minority, the majority of Palm Beach County's frogmen formed this organization for their own protection. They feared that these violations might lead to the closing of the everglades to frogging.

Because there have been a number of incidents where frog hunters have become lost in the glades, the froggers laid emphasis on rescue work when they were forming their organization code.

A year ago a newcomer to the glades became lost and ran his airboat around in circles for two days trying to find a land mark that would lead him to his boat landing.

When other air-boat operators finally found the man he was sitting in his boat talking to himself and crying. He was so glad to see a human being again that he tried to kiss one of his rescuers.

The rescue party was surprised to find that he had over 15 gallons of gas left in the boat. The fellow who was lost was even more surprised when he was told by the rescuers that he was only three or four miles away from his own boat landing!

The frogging business has come a long way from the days when a few men waded through the glades with a spear to pick up a couple of extra bucks. Gone also are the days when the frogs were sought by men who poled flat-bottomed boats for a bare existence.

Today the frogger makes a decent living and has modern equipment to make his work easier. And at least some of the men have begun to enjoy the privileges of an organized business.

And perhaps most important of all, a few of the frog hunters have started the ball rolling that may result in froggers all over the state becoming conscious of the importance of preserving the wildlife of Florida.

ST. JOHNS RIVER

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place among the great river of the world. Neither the Mississippi or the Nile exceeds the average expanse of the St. Johns between shore to shore for a full hundred miles above its mouth. The other bid to fame is that it is one of the two rivers of the continent whose entire course runs in a northerly direction.

With so many fish filled lakes on such a great river the question of where to fish becomes quite a problem to an angler on his first trip to the St. Johns area. But that won't last long. He will find that just about anyplace that can offer him the accommodations he desires will be the best place to fish.

Many choose the smaller lakes near the headwaters of the river. It is here, the oldtimers will tell you, that the big ones are still waiting to be taken. There is a current story that on Lakes Beresford and Dexter there are guides that will guarantee you the legal limit of bass in an

The Back Cover

The unposed shot by Photographer Charlie Anderson proves at least one thing—both the boys and bass come husky along the St. Johns River. The happy boy is Nick McGhee of Welaka, the unhappy bass preferred to remain unidentified.

hour's fishing time. They won't guarantee that all eight will be big ones but your chances of four and five pounders are good.

Of all the fishing areas of the lazy, sprawling St. Johns perhaps the vicinity of Lake George is the best known. Here will be found guides that have fished up and down the river, its lakes and all of its tributaries.

During the summer months when the water is warm and the majority of the bass are in deep holes and other hard-to-get-to places some of the guides will suggest a try near the mouth of the Ocklawaha. The cool waters of this spring fed river that winds for miles undisturbed through the Ocala National Forest seems to attract the fish on hot days. Later in the day if you are still short of your bag limit drop down to one of the many bars in the big

river. The bass often school in the down-stream eddy and can be seen striking at small fish and other natural bait. Bait for the St. Johns bass? You be the judge. Your favorite bass plug is just as good as any that can be suggested if you are a casting purist. If you happen to be a live bait fan, any of the fishing camps will furnish you with shiners, roaches or whatever live bait the fish are feeding best on. For these anglers that care to play with a load of dynamite—be sure to bring along the fly rod. A five-pound bass on the end of that ten or twelve foot rod will give you the supreme test.

And, if you are one of the "goodfellows" and have brought the Mrs. along for more than just the ride take a few hours off and give her a fishing thrill. A can of red worms, some crickets or other bait that will attract bream, crappie and redbreast, and a couple of old cane poles will do the trick. Ease the boat down the bank to a good growth of hyacinth that are overhung by a shady growth of cypress and spanish moss; push ten or fifteen feet into the tangled mass of hyacinth blooms and roots, let your baited hooks down 'till just a few inches from the bottom. It's a bream fisherman's heaven. And your wife should be in such a humor that on the trip back to camp ske might row the boat while you cast that favorite bass plug (you just happened to bring along) in the outer edge of the hyacinth beds. There's just bound to be a big one lurking there after such a good deed.

TIME TO TAKE STOCK

(Continued from Page 7)

story bear this out—Greece, Spain, China, India and many more throughout the history of man.

The time for our defiance of the laws of nature has come to an end. If we do not cease the practice of using up our resources faster than they can be replaced we too will become a "have not" nation. As Ding Darling pointed out in his cartoon last month, our trustee-ship will have failed and the race will spend the rest of its history fighting for what little resources remain. As for the United States we can then get along without a stock-taking, for there will be no inventory on our shelves. Old Mother Nature will have become Old Mother Hubbard.



. . . TOO MUCH BASS